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S2/257



### **MINUTES**

### ACCREDITED STANDARDS COMMITTEE ON MECHANICAL VIBRATION AND SHOCK, S2

### U.S. TAG FOR ISO/TC 108 MECHANICAL VIBRATION AND SHOCK

Denver, Colorado

6 October 1993

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### MINUTES OF S2 MEETING HELD IN DENVER, COLORADO, ON 6 OCTOBER 1993

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### ACCREDITED STANDARDS COMMITTEE ON MECHANICAL VIBRATION AND SHOCK, S2

U.S. TAG FOR <u>ISO/TC 108</u> (including ISO/TC 108/<u>SC1</u>, ISO/TC 108/<u>SC3</u> and ISO/TC 108/<u>SC5</u>)

**6 October 1993** 

The meeting was called to order by Mr. D.J. Evans, Chair S2, at 9:10 A.M. in the Biltmore Room, the Radisson Hotel, Denver, Colorado.

### ORGANIZATIONAL MEMBERS PRESENT

Arrington, J.R.

Brenig, A.

Evans. D.J.

Vice Chair, S2; ASA Alternate representative S2

**ASA Standards Manager** 

National Institute of Standards and Technology (NIST)

### **INDIVIDUAL EXPERTS PRESENT**

Muster, D.F.

Chair U.S. TAG ISO/TC 108; Chair S2/WG80

### OTHERS PRESENT

Herstein, L.A.

Tracor, Inc.; Chair S2/WG72

Merchant, H.C.

Mevenco, Inc.

Embleton, T.F.W.

Chair ASACOS, ASA Standards Director

Approval of the Minutes of the Ottawa, Canada meeting, held 19 May 1993 (\$2/251)
 Upon motion made and seconded, it was

VOTED to approve the

to approve the Minutes of the S2 meeting (S2/251) held on 19 May 1993, as circulated.

### 2. Organization

Mr. David J. Evans has taken over as S2 Chair, in place of Mr. Sabih Hayek, who is on sabbatical leave. A ballot to effect this change was taken in S2 (see under procedural ballots, item 10, page 16).

- a) A list of current working groups is attached (see ATTACHMENT A).
- b) New Organizational Members of S2 None to date.
- c) New working groups None to date.
- d) Personnel changes: None to date.
- e) A summary of activities is given in ATTACHMENT B.
- 3. Standards approved by ANSI in 1993 and published (or being published) by ASA
  - ANSI S2.48-1993 Servo-hydraulic test equipment for generating vibration, Method of describing characteristics.

Standards published by ASA can be ordered from the following address:

Professional Book Distributors (PBD)
ASA Standards Distribution Center
1650 Bluegrass Lakes Parkway
Alpharetta, Georgia 30239

Telephone: (4

(404) 442-8631

Telefax:

(404) 442-9742

NOTE:

20% discount on list price is available to ASA individual and sustaining

members for all standards published by ASA.

- 4. <u>Organizational matters and reports on working groups, including reports on letter</u>
  ballots and international matters
  - a) S2/Advisory Advisory Planning Committee to S2 J.R. Arrington, Chair

At the meeting, Mr. Arrington referred to the report he had prepared, listing the workload of the various working groups, and a list of those standards which needed review as to their reaffirmation, revision or withdrawal. It was agreed that this list needed updating and amendment (including the list of ISO/TC 108 standards) for comparison and alignment purposes. Mr. Arrington said that he could prepare this updated listing in approximately two weeks' time (i.e. by 20 October 1993).

It has been decided to form an <u>EDITORIAL COMMITTEE</u> in <u>S2 (S2 EDITORIAL)</u> whose business will be solely devoted to the idea of converting new international standards to national standards. There may be several mechanisms to achieve this, which will be explored with ANSI.

The current list of S2 standards is given in ATTACHMENT C.

b) S3/WG39 (S2) - Human Exposure to Mechanical Vibration and Shock - H.E. von Gierke, Chair (Counterpart to ISO/TC 108/SC4)

The <u>last meeting of ISO/TC 108/SC4</u> was held from 29 March to 1 April 1993, in London, U.K..

It was reported at the last meeting that the meeting of TC 108/SC4 was most successful with seven (7) documents reaching the stage of circulation as Draft International Standards. The national working group met on Tuesday, '8 May 1993, but without any participation. Mr. von Gierke has underscored that, with the work most active in the international arena, the U.S. should try to utilize the international standards and convert them to usage as national standards (see above, under S2/Advisory).

Mr. von Gierke 's report (submitted for the S3 meeting on 7 October 1993) is given below:

The working group had no meeting since six months ago because of insufficient participation of working group members. The draft of the revision of ISO 2631 has been prepared for circulation as a DIS by the chairman with inputs by correspondence and submitted to the ISO/TC 108/SC4 Secretariat for circulation. No other U.S. action of this working group is expected until this document will be circulated for vote with other documents from ISO/TC 108/SC4.

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - c) <u>S2/WG54 Atmospheric Blast Effects J.W. Reed, Chair; J.H. Keefer, Vice Chair</u>

Mr. Reed reported previously that a refined model for airblast damage versus incident over pressure had been developed and validated for incorporation into the <u>proposed revision of ANSI S2.20-1983 (R 1989)</u>. This standard was submitted to ISO/TC 43/SC1 for consideration as an ISO Standard.

Mr. Reed also attended the London meeting of ISO/TC 108 (22 March to 2 April 1993) as a result of which a new work item has been proposed for TC 108. The work item is entitled <u>ESTIMATING AIR BLAST CHARACTERISTICS</u>, <u>PROPAGATION</u>, <u>AND EFFECTS FROM EXPLOSIONS</u>.

The work item will be submitted to ISO/TC 108 for vote, and to ISO/TC 43 for information. If approved, the item will come under new working group ISO/TC 108/WG22. This work item nationally will come under this working group.

d) S2/WG63 - Vibration and Shock Isolators - H. Himelblau, Chair; S. Rubin, Vice Chair

Although an area of potential interest, no word has been heard from the chair for a number of years. Therefore, following discussion, it was agreed that this group should be disbanded, with thanks.

e) <u>S2/WG65 - Balancing Technology - D.G. Stadelbauer, Chair (Counterpart to ISO/TC 108/SC1</u>

The last meeting of S2/WG65 was held on 18 September 1993 in New York City. Mr. Stadelbauer has reported that S2/WG65 is presently working on revising and/or updating the following documents internationally:

ISO 1940 Part 2: Assessment of balance errors

ISO 3719 Balancing machines - Symbols for front panels

ISO 1925 Balancing - Vocabulary

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - e) <u>S2/WG65 Balancing Technology D.G. Stadelbauer, Chair (Counterpart to ISO/TC 108/SC1 (continued)</u>

ISO 5343 Criteria for evaluating flexible rotor balance

ISO 5406 Mechanical balancing of flexible rotors

The document on Susceptibility to Unbalance

ISO 2953 Balancing machines - Description and evaluation

The ANSI version of: ISO 8821 - Rotor shaft key convention has been drafted.

f) S2/WG66 - Methods of Acquiring, Analyzing and Presenting Vibration and Shock Data - (Vacant)

At the last meeting, it was agreed that Mr. Hayek would ask Mr. Krishnappa to recommend a chair for this working group. Otherwise, it was decided to wait until the work on <u>condition monitoring</u> had been developed before pressing forward with this activity. Following discussion, it was agreed that this working group should be disbanded, with thanks.

g) S2/WG67 - Measurement and Evaluation of Vibration and Shock in Land Vehicles - F. Chen, Chair

It was agreed to disband this working group, with thanks. The international working group was disbanded some time ago. It was also noted that the Chair could write to SAE stating that the international organization (ISO/TC 108/SC2) had discontinued the activity, but that if it should regenerate, we would like to know whether they wished to be involved in the process.

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - h) S2/WG69 Seismic testing G.E. Heberlein, Jr., Chair

This was a counterpart working group to an IEC working group which has now been disbanded. It was thought that if a document should be presented in the future, an ad hoc group could be formed to handle it. Meanwhile, it was agreed that this working group should be disbanded with thanks.

i) S2/WG72 - Vibration Testing - L. Herstein, Chair; G. Booth, Vice Chair (Counterpart to ISO/TC 108/WG4 and IEC/SC50A)

ANSI Standard S2.48-1993: Servo-hydraulic test equipment for generating vibration-Method of describing characteristics was approved by ANSI (see Section 3, on page 2).

At the meeting, it was agreed that, with the disbanding of the international counterpart working group, ISO/TC 108/WG4 on Vibration Testing, this working group should be disbanded with thanks.

The new International Subcommittee, ISO/TC 108/SC6 VIBRATION GENERATING EQUIPMENT, which was approved in September 1991 in Kobe, Japan, had only awaited a Secretariat organization to undertake responsibility for the Subcommittee. With the agreement of the Russian Federation to take on the task, the formalities are now being implemented (e.g. a note to P and O Members of ISO/TC 108 asking for registration in the new Subcommittee, and the filling out of the official ISO Forms by the Russian Federation for the ISO Technical Management Board approval.

A new working group, <u>S2/WG 90</u>, will be formed to act as the initial counterpart activity in S2 once TC 108/SC6 is officially established.

j) <u>S2/WG73 - Characterization of Damping Materials - (Vacant) (Counterpart to ISO/TC 108/SC2/WG13) - (vacant)</u>

At the last meeting, it was decided to convert the current ISO standard to a national standard. At the meeting, it was noted that the international working group ISO/TC 108/SC2/WG13, had now been disbanded; and that no activity was ongoing in the United States. It was therefore agreed to disband this working group, with thanks.

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - k) S2/WG74 Measurement of Mechanical Mobility. P.K. Baade, Chair (continued)

This working group has now been replaced, internationally, by the working group on Modal Analysis and Modal Testing. Therefore, it was agreed that this working group should be disbanded, with thanks. It was agreed at the meeting to form a new working group in S2 entitled MODAL ANALYSIS AND MODAL TESTING, <u>S2/WG91</u>. This is the counterpart to ISO/TC 108/WG20. A scope and rationale for this activity will be sent to S2 in due course.

I) <u>S2/WG76 - Measurement and Evaluation of Machinery Vibration - P.H. Maedel,</u> Chair (Counterpart to ISO/TC 108/SC2/WG1)

Mr. Maedel reported prior to the meeting (see ATTACHMENT D).

The working group last met on 16 July 1993 in Pennsylvania. The international counterpart working group is scheduled to meet in Richmond, Virginia, from 8 to 10 November 1993.

At the meeting, there was a discussion of the activities of this working group and the belief that it would be better served by having it ordered along regional or industrial lines, in order to bring into the work those involved in the field in (machinery type) diverse regions of the United States. The Chair of S2 will make a determination of how the restructuring of S2/WG76 should take place. A plan for its reorganization will be prepared by the S2 Chair before the next meeting of S2 (June 1994).

m) <u>S2/WG77 - Measurement and Evaluation of Ship Vibration - A.F. Kilcullen.</u> Chair. P. Shang. Vice Chair (Counterpart to ISO/TC 108/SC2/WG2)

Messrs. Kilcullen, Shang, and Taddeo respectively attended the meeting of ISO/TC 108 and its Subcommittees (which took place in London, U.K. from 22 March to 2 April 1993.)

Previously, it was noted that the scope of this working group did not address off-shore platforms. Mr. Muster had said that the problem was that neither S2 nor ISO/TC 108 was active in the area where one looks at structure-borne vibration.

It was also agreed that a scope review for S2/WG77 was in order and that, if broadened to include the area noted, there should be liaison with the other groups involved.

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - n) <u>S2/WG78 Measurement and Evaluation of Structural Vibration D. Siskind, Chair (Counterpart to ISO/TC 108/SC2/WG3)</u>

The working group will meet on 7 October 1993, in Denver, Colorado. (see <u>ATTACHMENT E</u> for Mr. Siskind's report).

Mr. Siskind has written of a need to table the activities because of low activity and membership in the working group. It was agreed that it was important to keep this working group on the books since it formed the U.S. counterpart group to ISO/TC 108/SC2/WG3, which is active.

o) S2/WG79 - Characterization of the Dynamic Mechanical Properties of Viscoelastic Polymers - W. Reader, Chair; W. Madigosky, Vice Chair

The working group will meet on 6 October 1993 (same time as the S2 meeting). A report is expected following this meeting.

p) <u>S2/WG80 - Vibration and Shock Terminology - D. Muster, Chair (Counterpart to ISO/TC 108/WG1)</u>

ISO 2041:1990 Vibration and Shock - Vocabulary, was published as an international standard. The standard is to be prepared as a proposed ANSI standard and circulated to S2 shortly for ballot.

At the last meeting, Mr. Eldred suggested that if, by the time of the October 1993 meeting, the document had not yet been received, then the international standard, ISO 2041-1990, should be prepared for national ballot.

The letter ballot sent to Accredited Standards Committee S1, Acoustics on the proposed revision of ANSI S1.1-1960 (R 1976) Acoustical Terminology, draft dated March 1993, was also circulated to S2 (S2/249) for information and comment. Comments on this document were requested by no later than the close of the S1 ballot, 7 May 1993.

A revision of this document was prepared by Mr. Galloway and sent to S1 for 30-Day Review (LB/S1.1/391). The document was also sent to S2, S3 and S12 for information on August 1993. The date given for response was 27 September 1993.

At the meeting, Mr. Muster said that he had prepared the first part of ISO-2041 for national ballot, but that the other parts were not yet ready. He said he anticipated their availability prior to the next meeting of S2 (June 1994).

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- 4. <u>Organizational matters and reports on working groups, including reports on letter</u> ballots and international matters (continued)
  - q) <u>S2/WG81 Use and Calibration of Vibration and Shock Measuring Instruments B. Douglas, Chair; M. Gross, Vice Chair (Counterpart to ISO/TC 108/SC3)</u>
    - Mr. Douglas reported prior to the meeting as follows:

Dr. Bruce Douglas, Mr. Mike Gross and Mr. Mark Gilstrap represented S2/WG81 at the 16th Plenary Meeting of ISO/TC 108/SC3 held in London 22-26 March 1993. Mr. Gilstrap was requested to serve as convenor of WG 10 involved with vibration condition monitoring transducers and Dr. Douglas was requested to serve as convenor of WG 6 involved with the calibration of vibration transducers. It is requested that S2 consider these requests and, if approved by ANSI, notify both the Danish Secretariat and the individuals involved.

Dr. Douglas currently is finalizing ISO 10817, a standard entitled "Radial Rotating Shaft Vibration Measuring Systems Part 1 Relative and Absolute Signal Sensing". This standard will be circulated to S2/WG81 members in October 1993 for comment and submitted 1. SC 3 for consideration by TC 108.

At the meeting, it was reported that the next meeting of the working group, S2/WG81, would take place in San Juan Capistrano, California in September 1994, at the same time as the ISO/TC 108/SC3 meeting.

- r) S2/WG83 Acoustic Vibration Testing G. Getline, Chair (Counterpart to IEC/SC50A/WG11)
  - Mr. Getline reported prior to the meeting as follows:

The working group is presently dormant. Still awaiting review of IEC SC50A/WG11 Draft Standard. At last inquiry, document was still in circulation.

Following discussion on the fact that this working group exists solely as a counterpart to an IEC working group which is currently dormant, it was agreed to disband this working group, with thanks.

s) S2/WG84 - Counterpart to IEC/SC50A/WG12 - Revision of the Dynamic Tests - Bump. Shock, etc... of IEC Publication 68 - (Vacant)

It was agreed to disband this working group, with thanks. The chair is vacant and the work of the U.S. TAG is actually provided by the Institute of Environmental Sciences (IES). Therefore, it was decided that only a general counterpart activity to IEC/SC50A (i.e. S2/WG85) is needed at this time.

- 4. <u>Organizational matters and reports on working groups, including reports on letter ballots and international matters (continued)</u>
  - t) S2/WG85 General Counterpart to IEC/SC50A (Vacant) (continued)

See above working group report (<u>S2/WG84</u>).

As noted, this working group will remain in force as the general counterpart to IEC/SC50. It was agreed that Mr. L. Herstein would chair this working group activity, which essentially replaces the counterpart activity provided by working group S2/WG72.

u) <u>S2/WG86 - Methods for Measuring and Reporting Vibration and Shock Resistance of Motion-Sensitive Equipment - D. Alcoe, Chair (Counterpart to ISO/TC 108/SC2/WG16).</u>

Mr. Evans agreed to inquire into the status of this working group activity.

v) <u>S2/WG87 - Shock Testing Machines (Counterpart to former ISO/TC 108/WG15)</u> - R. Bowser, Chair

The international working group in this area has been disbanded. Therefore, it was agreed that this working group should now be disbanded, with thanks.

w) S2/WG88 - Measurement and Evaluation of Machine Tool Vibration - J.H. Pyne, Chair

The last report received from Mr. Pyne was as follows:

Procedures for measurement evaluation of individual machine components is nearly completed. Work is being done on procedures for vibration evaluation on an assembled machine.

It is anticipated that a preliminary draft document will be available by Spring 1994.

The working group met on 11-12 May 1993, at the General Motors Technical Center, in Warren, Michigan.

### 5. International Organization for Standardization (ISO)

(a) International Organization for Standardization (ISO) - Technical Committee ISO/TC 108 on Mechanical Vibration and Shock - D. Muster, U.S. Technical Advisor

### (i) General

International documents processed by the Standards Secretariat are listed in ATTACHMENT F.

### ii) U.S. Delegates to ISO/TC 108 and Subcommittee Meetings

Mr. Muster noted that currently, the U.S. delegates to the international meetings of ISO/TC 108 and its various Subcommittees, are uninstructed. That is to say, that although the U.S. delegation is sizable in attending these meetings, the delegation from the U.S. is not aware of the U.S. positions or, if it is, it feels in no way obligated to adhere to these positions.

This means that the United States does not present a uniform front in the international arena and, where bloc voting occurs from the European perspective, the U.S. often does not have a voice.

Mr. Muster said that those attending the international meetings should be appointed by the U.S. TAG Chair, Chief Delegates assigned ahead of time, and meetings held both in the United State, and at the meeting site a day or two ahead of the meetings in order to discuss the U.S. positions and any strategies which may be employed, as required, in terms of the U.S. interests.

Currently, the U.S. TAG Chairs for the various groups are as follows:

ISO/TC 108
ISO/TC 108/SC1
ISO/TC 108/SC2
ISO/TC 108/SC3
ISO/TC 108/SC4
ISO/TC 108/SC4
ISO/TC 108/SC5
ISO/TC 108/SC5
ISO/TC 108/SC6
ISO/TC 108/SC7
ISO/TC 108

### 5. <u>International Organization for Standardization (ISO) (continued)</u>

- (a) International Organization for Standardization (ISO) Technical Committee ISO/TC 108 on Mechanical Vibration and Shock D. Muster. U.S. Technical Advisor (continued)
  - (iii) ISO/TC 108/SC5 Condition Monitoring and Diagnostics of Machines

The Secretariat for this Subcommittee, established in February 1993, is the United States.

The initial meeting of ISO/TC 108/SC5, to be chaired by D. Muster, will take place from 24-25 March 1994, in Swansea, Wales, U.K., in conjunction with the Condition Monitoring Conference, which is being held from 21 to 24 March 1994.

General information on this meeting will be circulated shortly. Meanwhile, the draft agenda for this meeting, and the initial working group structure for ISO/TC 108/SC5 (ISO/TC 108/SC5 N 1 and ISO/TC 108/SC5 N2) are included as attachments to these Minutes (ATTACHMENT G).

At the S2 meeting, following discussion, it was

**VOTED** 

to establish <u>S2/WG89</u> as the counterpart activity for ISO/TC 108/SC5 with the scope to take care of the activities of ISO/TC 108/SC5 until such time as TC 108/SC5 develops to the point where it will need a cluster of counterpart working groups in S2.

Mr Muster agreed to act as the U.S. TAG Chair for ISO/TC 108/SC5 on the understanding that, as soon as a suitable replacement were found, he would relinquish that post. The point was made by Mr. Muster that, in his opinion (and advocated by ASACOS two days earlier), the same person should not hold both an international chair of an International Technical Committee or Subcommittee and be the U.S. TAG Chair and/or U.S. Technical Advisor for the U.S. counterpart of that activity.

Following discussion, and further to motion made and seconded, it was

VOTED

that S2 recommend to ASACOS that anyone who holds the international chair at the level of Technical Committee or Subcommittee should not also hold the chair of the U.S. TAG or act as Technical Advisor for the same Technical Committee or Subcommittee.

### 5. <u>International Organization for Standardization (ISO) (continued)</u>

(a) International Organization for Standardization (ISO) - Technical Committee ISO/TC 108 on Mechanical Vibration and Shock - D. Muster, U.S. Technical Advisor (continued)

### (iv) ISO/TC 108/SC6 Vibration Generation Systems

With respect to the projected new Subcommittee, ISO/TC 108/SC6 VIBRATION GENERATION EQUIPMENT, it was agreed that a counterpart working group, <u>S2/WG90</u>, would be formed, with G. Booth as Chair. The scope of this activity, similar to that of S2/WG89 for TC 108/SC5 (see above) would take care of the activities of ISO/TC 108/SC6 until such time as TC 108/SC6 develops to the point where it will need a cluster of counterpart working groups in S2.

### (v) ISO 9000 Series of Quality Assurance Standards

Also discussed was the ISO 9000 series of quality assurance standards and the new advisory group setup in ISO/TC 108 to look into this series inasmuch as it affects the standards developed by ISO/TC 108 (ISO/TC 108/WG 21). This advisory group has the title "Application of quality management and assurance in the program of work of ISO/TC 108." Accordingly, upon motion made and seconded, it was

VOTED

that S2 recommends that ASACOS consider the question of what to do about the ISO 9000 series of quality assurance standards (or their ANSI equivalents) and problems in national standards relating to quality assurance.

### 6. International Electrotechnical Commission (IEC)

(a) <u>IEC/SC50A Shock and Vibration Tests - I. Brockman. Technical Advisor - D.</u>

Muster, U.S. Deputy Technical Advisor

Mr. Brockman was appointed by the U.S.N.C. of IEC to succeed Mr. Carter as Technical Advisor for IEC/TC 50 and its Subcommittees (December 1990). Mr. Douglas Muster is Deputy Technical Advisor to IEC/SC50A Shock and Vibration Tests. Mesers. Brockman and Muster previously agreed to submit a letter or document for S2 which would disclose a plan for the activities and interaction of S2 and the U.S. TAG for IEC/SC50A (S2 was assigned official responsibility for this IEC Subcommittee by ANSI).

### 6. International Electrotechnical Commission (IEC) (continued)

(a) IEC/SC50A Shock and Vibration Tests - I. Brockman, Technical Advisor - D. Muster, U.S. Deputy Technical Advisor (continued)

Please see the statement regarding the official U.S. TAG for IEC/SC50A, under item 4 (s), page 9 of these Minutes. <u>As stated, the Institute of Environmental Sciences (IES) is considered the U.S. TAG for IEC/SC50A.</u>

### 7. Review of Standards more than five years in existence

Section 4.4 of the ANSI Procedures for the Development and Coordination of American National Standards requires that each complete American National Standard (including its supplements and addenda) be reviewed at least every five (5) years to determine whether it should be reaffirmed, revised, or withdrawn. Provision is made for extensions of time, except that no extension is granted beyond ten (10) years from the date of approval by ANSI.

### 8. New International Standards Available from ANSI

● ISO 8041: 1990 Human response to vibration - Measuring instrumentation, TECHNICAL CORRIGENDUM 1

● ISO 5347-0: 1987 Methods for the calibration of vibration and shock pick-ups - Part 0: Basic concepts, TECHNICAL CORRIGENDUM 2

9. Documents from other organizations submitted to S2 for vote and/or comment

None to date.

### 10. Procedural Ballots

a) According to ANSI's procedures, under which the Accredited Standards Committees operate, the Officers of the Standards Committees are to be confirmed (at the beginning of their terms), as well as Individual Experts (the latter to be confirmed annually) by the respective Standards Committees.

### 10. Procedural Ballots (continued)

A letter ballot will be circulated to Accredited Standards Committee S2 in December 1993 on the proposed appointments for 1994/1995. The respective appointments, if approved, will take effect following the June 1994 meeting of ASA.

b) A ballot was sent to S2 (LB/S2/254) ON 15 July 1993 to approve Mr. D.J. Evans completing the term of office of Mr. Hayek; Mr. Hayek becoming an Individual Expert on S2, and the establishment of the S2 Editorial Committee, to be chaired by Mr. Hayek. The results of this ballot are given in ATTACHMENT H. As a result of this ballot, the above actions are being implemented.

### 11. Other Business

a) S2 should decide whether to form a working group to consider the revision of S9.1 ANSI Standard Guide for the Selection of Mechanical Devices used in Monitoring Acceleration Induced by Shock. It was previously agreed that the scope of the standard should be examined closely before deciding whether to form an S2 working group.

### b) Review of the S2 organization

The need for more organizational members for S2 has been stressed.

A listing of the S2 working groups proposed for <u>disbanding</u> at this meeting is given below:

- S2/WG63 Vibration and Shock Isolators
- S2/WG66 Methods of Acquiring, Analyzing and Presenting Vibration and Shock Data
- \$2/WG67 Measurement and Evaluation of Vibration and Shock in Land Vehicles (counterpart to ISO/TC 108/SC2/WG4)
- S2/WG69 Seismic Testing (counterpart to IEC/SC50A/WG8)
- \$2/WG72 Vibration Testing (counterpart to ISO/TC 108/WG4 and IEC/SC50A)
- S2/WG73 Characterization of Damping Materials (counterpart to ISO/TC 108/SC2)
- \$2/WG74 Measurement of Mechanical Mobility
- S2/WG83 Acoustic Vibration Testing (counterpart to IEC/SC50A/WG11)

### 11. Other Business (continued)

b) Review of the S2 organization (continued)

A listing of the S2 working groups proposed for <u>disbanding</u> at this meeting is given below: (continued)

- S2/WG84 Counterpart to IEC/WC50A/WG12
- S2/WG87 Shock Testing Machines

Groups proposed for <u>establishment</u> are as follows:

- S2/WG89 Counterpart to ISO/TC 108/SC5
- <u>S2/WG90</u> Counterpart to ISO/TC 108/SC6 (when formed)
- <u>S2/WG91</u> Modal Analysis and Modal Testing (counterpart to ISO/TC 108/WG20)

Administrative letter ballots will be sent to S2 on the above in due course.

Following discussion at the S2 meeting, and upon motion made and seconded, it was

VOTED

that S2 should form an Executive Committee to be appointed by the S2 Chair. The tasks of the S2 Executive Committee will be to assist the S2 Chair in formulating policy for S2, including direction in determining policy for S2, and to make decisions involving S2 activities, subject to ratification by the S2 membership.

It was agreed at the meeting that S2 should review its activities nationally and internationally and its mission. It was considered that its prime mission was to develop national standards. At this time, most of the standards developed in S2 come by way of international standards' process and most working group chairs are unaware that they should primarily be preparing national standards. While it is perfectly acceptable to elevelop U.S. standards from the international standards that exist, the idea of preparing U.S. material first as national standards and then to the international committees, does not generally occur. Harmonizing with European and other countries is excellent, but it was considered that the U.S. working group chairs need to remain cormizant of industrial interests domestically.

### 11. Other Business (continued)

### b) Review of the S2 organization (continued)

These issues will be considered in the reorganization of S2, to shift the focus from solely a counterpart activity to the international work, to the idea of focus on the national product as well as development and harmonization in the international standards' process.

It was agreed that there should be a meeting of all of the S2 working group chairs at a time and location that would be suitable for most people, and to occur prior to the next meeting of S2 (June 1994). The sites of Washington, New York, and Houston were discussed.

### 12. Future Meetings

The next meeting of S2 will be held on Wednesday, 8 June 1994, in Cambridge, Mass., commencing at 9:00 A.M.

### 13. Adjournment

The meeting was adjourned at 12:30 P.M.

Avril Brenig

Standards Manager



### ACOUSTICAL SOCIETY OF AMERICA

OFFICE OF THE STANDARDS SECRETARIAT 120 WALL STREET, 32nd FLOOR, NEW YORK, NEW YORK 10005-3993

ATTACHMENT A-1 S2/257

AVRIL BRENIG, Dr. P. H. STANDARDS MANAGER

Telephone (212) 248-0373 Telefax (212) 248-0146

**ACCREDITED STANDARDS COMMITTEE ON MECHANICAL VIBRATION AND SHOCK - S2** 

**SECRETARIAT: Acoustical Society of America** 

SCOPE: Standards, specifications, methods of measurement and test, and terminology

in the fields of mechanical vibration and shock, and condition monitoring and diagnostics of machines, but excluding those aspects which pertain to

biological safety, tolerance and comfort.

CHAIR: D.J. Evans VICE CHAIR: J.R. Arrington

National Institute Standards 5042 Chancel Drive

and Technology Huntsville, AL 35802 Building 233, Room A147

Gaithersburg, MD 20899 Tel: (205) 842-8299 Fax: (205) 881-7309

Tel: (301) 975-6634 Fax: (301) 417-0514

**SECRETARY: A. Brenig** 

Standards Secretariat

Acoustical Society of America 120 Wall Street, 32nd Floor New York, NY 10005-3993

Tel: (212) 248-0373 Fax: (212) 248-0146

**WORKING GROUP** 

TITLE AND SCOPE

**CHAIR** 

J.R. Arrington

(a) S2/Advisory

S2 Advisory Planning Committee - Be cognizant of standards needs within the scope of the Committee, and organize those needs in accordance with priority, and other relevant factors, into a coherent three year plan for Committee activity. This three year plan for the preparation of standards should include those which need updating, having regard to the international work items and standards, and the need for timely review (reaffirmations, revisions, withdrawals, etc.) of all national standards, and the priority of new standards needs.

The plan of action should be developed with attention to: (i) the overall Committee scope, (ii) its technological needs, (iii) the relation of national to international standardization, (iv) the rate of development of new standards, and (v) the timeliness of the preparation of revisions (i standards.

ATTACHMENT A-2 S2/257

(vacant)

**WORKING GROUP** TITLE AND SCOPE **CHAIR** (b) S2/Editorial S2/Editorial - To edit international standards that S.I. Hayek are selected to become prepared American National Standards. (c) S3/WG39 (S2) Human Exposure to Mechanical Vibration and H.E. von Gierke Shock (counterpart to ISO/TC 108/SC4) -Standardization in the field of shock, vibration and related biodynamic environments with regard to health, safety, performance and comfort criteria and guidelines regarding the effects of occupational and non-occupational exposures on the human population (environments of primary interest are: vibration, rotational oscillations, shock and impact transmitted to the whole-body or parts thereof). Preparation of standard terminology and characterization of the biodynamic properties of humans with and without support and restraint devices by means of biodynamic models or analogues is also included as a basis for the description of the physical. behavioral and physiological effects of the mechanical environments under consideration. Atmospheric Blast Effects - Source, propagation (d) S2/WG54 J.W. Reed and effects of airblast waves. J.H. Keefer Vice Chair (e) S2/WG63 Vibration and Shock Isolators - Revision of H. Himelblau ANSI S2.8-1972 Guide for Describing the S. Rubin Characteristics of Resilient Mountings. Vice Chair (f) S2/WG65 Balancing Technology (counterpart to ISO/TC 108/ D.G. Stadelbauer SC1 - Prepare standards on dynamic balancing and balancing machines, including related hardware, procedures and terminology, monitor existing

standards, and suggest modifications where

Methods of Acquiring, Analyzing and Presenting

<u>Vibration and Shock Data</u> - Acquisition, analysis, and presentation of shock and vibration data.

appropriate.

(g) S2/WG66

WORKING GROUP	TITLE AND SCOPE	CHAIR
(h) \$2/WG67	Measurement and Evaluation of Vibration and Shock in Land Vehicles  Measurement, analysis and classification of vibration and shock with regard to all forms of land vehicles. This shall include vibration and shock sources, their transmission paths, and the end results. It shall include computer and laboratory simulations as well as the vehicle itself.	F. Chen
(i) \$2/WG69	Seismic Testing (counterpart to IEC/SC50A/WG8) - To produce a seismic test standard for electrical and communication equipment.	G.E. Heberlein
(j) \$2/WG72	Vibration Testing (counterpart to ISO/TC 108/WG4 and IEC/SC50A) - To develop standards for vibration testing equipment, including hydraulic testing equipment and auxiliary tables for generating vibration; to develop standards related to shock and vibration tests, and to interact with parallel ISO and IEC working groups.	L. Herstein G. Booth, Vice Chair
(k) <b>S2/W</b> G73	Characterization of Damping Materials (counterpart to ISO/TC 108/SC2/WG13) - Damping configuration in a structural system; nomenclature for specifying the damping properties of materials; and characterization of damping materials.	<u>(vacant)</u>
(I) S2/WG74	Measurement of Mechanical Mobility - Laboratory procedures, instrument calibration and evaluation necessary for making accurate mechanical mobility measurement.	P.K. Baade
(m) S2/WG76	Measurement and Evaluation of Machinery Vibration (counterpart to ISO/TC 108/SC2/WG1) - Development of standards for the measurement and evaluation of mechanical vibration of general classes of machines. The characteristics of the machine, instrumentation, measurement and evaluation procedures shall be considered.	P.H. Maedel
	The evaluation of machine vibrations shall include acceptance testing, operational monitoring, and consideration of the structural integrity of the machine. Consideration will also be given to the effect of the environment on the machine and the machine on the environment.	

WORKING GROUP	TITLE AND SCOPE	CHAIR
(n) S2/WG77	Measurement and Evaluation of Ship Vibration (counterpart to ISO/TC 108/SC2/WG2) - Establishing a basis for specifying evaluation standards for vibration in ships including measuring procedures.	A. Kilcullen, Chair P. Shang, Vice-Chair
(o) S2/WG78	Measurement and Evaluation of Structural Vibration (counterpart to ISO/TC 108/SC2/WG3) - Measurement and evaluation of vibrations and shock response of stationary structures including but not limited to buildings, dams, bridges, and towers. Vibration and shock may be transmitted in the structure by the ground, air, or generated within the structure itself.	D. Siskind
(p) S2/WG79	Characterization of the Dynamic Mechanical Properties of Viscoelastic Polymers - Measurement procedures, instrument calibration, data processing algorithms, and data reporting formats for dynamic properties of viscoelastic polymers. Properties of interest include the complex shear, Young's, and bulk moduli; the Lame' constants, Poisson's ratio, and the frequency-temperature shift functions obtained through application of the time-temperature superposition principle.	W. Reader W. Madigosky, Vice Chair
(q) \$2/WG80	Vibration and Shock Terminology (counterpart to ISO/TC 108/WG1) - Development of standard terminology in the area of mechanical vibration and shock.	D. Muster
(r) S2/WG81	Use and Calibration of Vibration and Shock  Measuring Instruments (counterpart to ISO/TC 108/ SC3) - Standardization in the field of use and calibration of mechanical vibration and shock measuring instruments.	B. Douglas
(s) S2/WG83	Acoustic Vibration Testing (counterpart to IEC/ SC50A/WG11) - Response on international documents, including the revision of IEC/SC50A(Secretariat)199.	G. Getline
(t) S2/WG84	Counterpart to IEC/SC50A/WG12 - Revision of the dynamic tests - bump, shock, etc. of IEC Publication 68 (Documents Ea, Eb, Ec, Ed and Ee).	(vacant)
(u) \$2/WG85	General Counterpart to IEC/SC50A - Standardization in the area of shock and vibration tests; U.S. response on international documents.	(vacant)

**WORKING GROUP** TITLE AND SCOPE **CHAIR** (v) S2/WG86 Methods for Measuring and Reporting Vibration and D. Alcoe **Shock Resistance of Motion-Sensitive Equipment** (counterpart to ISO/TC 108/SC2/WG16) - Methods and standard format for measuring and reporting vibration and shock resistance of motion-sensitive equipment such as digital computers, electron microscopes, and their components. (w) S2/WG87 Shock Testing Machines - The development of standards R. Bowser for shock testing machines; interaction with parallel ISO standards. (x) S2/WG88 Measurement and Evaluation of Machine Tool J.H. Pyne Vibration - Development of a standard for the measurement and evaluation of mechanical vibrations of machine tools and associated apparatus. The characteristics of the machines, instrumentation, measurement and evaluation procedures shall be considered and vibration level criteria for machine tool acceptance, established. The evaluation of vibration shall include acceptance testing and condition monitoring for maintenance. Consideration shall also be given to the effect of foundation and environment on the machine and the machine on the environment.

### ATTACHMENT B-1 S2/257

# STATUS REPORT

STATUS: MECHANICAL VIBRATION AND SHOCK

FIELD:

COMMITTEE	S2		i		
DESIGNATION/ EDITION	SUBJECT OR TITLE	STATUS	US ACTIVITY	ry method	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.2-1959 (R 1990)	Calibration of Shock and Vibration Pick-ups, Methods for the,Calibration of Shock and Vibration Pickups	UD;SP	0	<b>ω</b>	
S2.3-196 <del>4</del>	High-Impact Shock Machines for Electronic Devices, Specifications for a High-Impact Shock Machine for Electronic Devices	ss, UD	0	S	
S2.4-1976 (R 1990)	Specifying the Characteristics of Auxiliary Equipment for Shock and Vibration Measurements, Methods for (revision of \$2.4-1982) (\$2/WG72)	ent UD	0	ဟ	
S2.5-1962	Specifying the Performance of Vibrating Machines, Recommendation for Specifying the Performance of Vibration Machines	OD Ye	0	w	
STATUS NS - NEW STD IN PROCESS RF - REAFFRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVRONMENTAL SOUND SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW O-NONE AP- ANSI APPROVED 1-FORMATIVE ST OP - OUT OF PRINT 2-DRAFTING STA NA - NOT YET AVAIL. 3-VOTING ON PR	ACTIVITY FAGE INDARD IOPOSAL	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDER 6-ANSI CONSIDERING APPROVAL	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	METHOD C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED SIDS. COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-2 S2/257

# STATUS REPORT

STATUS: MECHANICAL VIBRATION AND SHOCK

FIELD:

COMMITTEE	S2			
DESIGNATION/ EDITION	SUBJECT OR TITLE	STATUS	ACTIVITY METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.6-1963 (R 1976)	Nomenclature and Symbols for Specifying the Mechanical Impedance of Structures (S2/WG74)	Withdrawn	S	Superseded by S2.31-1979 (see below)
S2.7-1976 (R 1986)	Balancing Terminology (S2/WG65)	gn	S	
S2.8-1972 (R 1986)	Resilient Mounting, Guide for Describing the Characteristics of (S2/WG63)	RV;ES	S	
S2.9-1976 (R 1990)	Specifying Damping Properties of Materials, Nomenclature for (S2/WG73)	QN	w	
S2.10-1971 (R 1990)	Analysis and presentation of Shock and Vibration Data, Methods for (S2/WG66)	9	v	
STATUS NS - NEW STD IN PROCESS RF - REAFFRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW O-NONE AP - ANSI APPROVED 1-FORMATIVE ST OP - OUT OF PRINT 2-DRAFTING STA NA - NOT YET AVAIL. 3-VOTING ON PRINT UD - UP-TO-DATE	<b>&gt;</b> .	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	METHOD C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-3 S2/257

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DESIGNATION/ EDITION	SUBJECT OR TITLE	TLE		STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.11-1969 (R 1989)	Calibration and used for Measur (\$2/WG81)	Calibration and Tests for Electrical Transducers used for Measuring Shock and Vibration, Select (S2/WG81)	Calibration and Tests for Electrical Transducers used for Measuring Shock and Vibration, Selection of (S2/WG81)	9		S	
S2.12	Vibration Test f	Vibration Test for Electrical Equipment Components	nent	NA A	0	S	
S2.13	Shock Test for	Shock Test for Electronic Equipment Components	ent Components	Status Unknown	0	S	
S2.14-1973	Performance of Shock Mac Specifying the (S2/WG87)	. Performance of Shock Machines, Methods for Specifying the (S2/WG87)	Aethods for	an		S	
	STATUS		ACTIVITY				МЕТНОО
NS - NEW STD IN PROCESS RF - REAFFIRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM		NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	0-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL		4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CTION CONSIDERED APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-4 S2/257

# STATUS REPORT

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COMMITTEE	S2				
DESIGNATION/ EDITION	N/ SUBJECT OR TITLE	STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.15-1972 (R 1986)	Design, Construction and Operation of Class HI (high-impact) Shock Testing Machines, Specifications for (S2/WG87)	an D		ဟ	
\$2.16	Acoustic Environmental Testing for Equipment and Assemblies (formerly S2/WG43 (S1))		0	တ	Activities dropped in S2
S2.17-1980 (R 1986)	Techniques of Machinery Vibration Measurement (S2/WG81)	9		တ	
S2.18-199X	S2.18-199X Mechanical Vibration of Machines with Operating Speeds from 10 to 200 revs-Basis for Specifying Evaluation Standards (counterpart to 150 2372-1974) (S2/WG76)	NS;SP ds	8	w	Process of corversion; awaiting new text
STATI NS - NEW STD IN PROCESS RF - REAFFIRMATION IN PROC RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROC ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW 0-NONE  OC. AP - ANSI APPROVED 1-FORMATIVE ST  OP - OUT OF PRINT 2-DRAFTING STA  CESS NA - NOT YET AVAIL 3-VOTING ON PR  ND UD - UP-TO-DATE	<b>&gt;</b> .	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CCTION CONSIDERED APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-5 S2/257

## STATUS REPORT

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COMMITTEE	<b>S2</b>						
DESIGNATION/ EDITION	SUBJECT OR TITLE	A TITLE	<b>σ</b>	STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.19-1989	Balance Oua	Balance Quality of Rigid Rotors (S2/WG65)		RV;SP		တ	
S2.20-1983	Estimating A Explosions in Atmospheric	Estimating Airblast Characteristics for Single Point Explosions in Air, with a Guide to Evaluation of Atmospheric Propagation and Effects (S2/WG54)	eint	АР		σ	
*224.21-1957 (R 1989)	Pick-ups for Methods for	Pick-ups for Shock and Vibration Measu Methods for Specifying the Characterist	rements, ics of (S2/WG81)	QW C		v	
S2.31-1979 (R 1986)	Measuremen (Supersedes	Measurement of Mechanical Mobility; Part 1 (Supersedes S2.6-1963) (S2/WG74)		<u>α</u>		ဟ	
*\$2 designation will be given upon revision	e given upon revisi STATIIS	<u>.</u>	YIML				COLLEGE
NS - NEW STD IN PROCESS RF - REAFHRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND	CESS IN PROC. CESS N PROCESS N PROCESS	NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	0-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL	4-ANS 5-OBJ 6-ANS	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CTION CONSIDERED APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM

### ATTACHMENT B-6 S2/257

# STATUS REPORT

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	METHOD	Ø	Ø	ဟ		
	ACTIVITY					4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL
	STATUS	9_	S	g.	ځ	
		tion of Mechanical gle-Point Translational	<u>t III:</u> teady-state marily sdictions	nation of emplete Mobility	ACTIVITY	O-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL
	R TITLE	Methods for the Experimental Determination Mobility Part II: Measurements Using Single-Excitation (S2/WG74)	Measurement of Mechanical Mobility Part III: Covering mobility measurements using steady-state rotational excitation at a single point. Primarily intended for rotor torsional resonance predictions (CD 7626-III) (S2/WG74)	ANSI Guide to the Experimental Determination of Rotational Mobility Properties and the Complete Matrix, Part IV (CD 7626-IV) (S2/WG74)		NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE
<b>S2</b>	N/ SUBJECT OR TITLE	Methods for the Exper Mobility Part II: Meason Excitation (S2/WG74)	Measurement of Mechani Covering mobility measur rotational excitation at a intended for rotor torsion (CD 7626-III) (S2/WG74)	ANSI Guide to the Rotational Mobility Matrix, Part IV (CE	STATUS	NS - NEW STD IN PROCESS  FF - FEAFFIRMATION IN PROC.  RV - REVISION IN PROCESS  WD - WITHDRAWAL IN PROCESS  ES - ENVIRONMENTAL SOUND  SP - SUBMITTED PINS FORM
COMMITTEE	DESIGNATION/ EDITION	S2.32-1982 (R 1990)	\$2.33	S2.34-1984 (R 1990)		NS - NEW STD IN PROCESS RF - REAFFRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCE ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM

### ATTACHMENT B-7 \$2/257

# STATUS REPORT

MECHANICAL VIBRATION AND SHOCK

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COMMITTEE	E: \$2						
DESIGNATION	ON( SUBJECT OR TITLE	OR TITLE		STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.35	Measurement of   mobility measurer forcing functions techniques for da	Measurement of Mechanical Mobility Part V.: Covering mobility measurement using impact excitation and other forcing functions which use the same Fourier transform techniques for data reduction (DIS 7626-V) (S2/WG74)	1 V: Covering tation and other urier transform V) (\$2/WG74)	S.		ø	
\$2.36	Measurement of Mech (CD 7626) (S2/WG74)	Measurement of Mechanical Mobility Part VI (CD 7626) (S2/WG74)	3	S	į	တ	
\$2.37	Vibration and Shock - Vocal ISO 2041-1975 (S2/WG80)	Vibration and Shock - Vocabulary, Bilingual Edition ISO 2041-1975 (S2/WG80)	Jal Edition	NS;SP	-	s	
S2.38-1982 (R 1990)		Field Balancing Equipment-Description and Evaluation (counterpart to ISO 2371-1974) (S2/WG65)	id (4) (S2/WG65)	9		Ø	
	STATUS	i	ACTIVITY	<b>~</b>			METHOD
NS - NEW STD IN PROCESS  FF - REAFFIRMATION IN PRO  RV - REVISION IN PROCESS  WD - WITHDRAWAL IN PRO  ES - BNVIROMMENTAL SOUN  SP - SUBMITTED PINS FORM	NS - NEW STD IN PROCESS  RF - REAFFRMATION IN PROC.  RV - REVISION IN PROCESS  WD - WITHDRAWAL IN PROCESS  ES - ENVIRONMENTAL SOUND  SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	O-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL	_1	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CTION CONSIDERED APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-8 S2/257

# STATUS REPORT

STATUS: MECHANICAL VIBRATION AND SHOCK

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COMMITTEE	: S2						
DESIGNATION/ EDITION	NV SUBJECT OR TITLE	R TITLE		STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.39	Balancing Machines (counterpart to <u>ISO</u>	Balancing Machines-Description and Evaluation (counterpart to <u>ISO 2953-1975</u> ) (S2/WG65)	iluation 365)	NS;SP	7	ဖ	Awaiting rev. test procedure; to be balloted
S2.40-1984 (R 1990)	· 1	Mechanical Vibration of Rotating and Reciprocating Machinery-Requirements for Instruments for Measurement Vibration Severity (counterpart to 150 2954-1975)	ciprocating s for Measurement 954-1975)	9		တ	
S2.41-1985 (R 1990)		Mechanical Vibration of Large Rotating Machines with Speed Ranging from 10 to 200 revs-Measurement and Evaluation of Vibration Severity in situ (counterpart to <u>ISO 3945-1977</u> ) (S2/WG76)	Machines with asurement and counterpart	gn		ဖ	
S2.42-1982 (R 1990)		Procedures for Balancing Flexible Rotors (counterpart to ISO 5406-1980) (S2/WG65)	(counterpart	9	r	Ø	
i	STATUS		ACTIVITY	<b>~</b>			МЕТНОВ
NS - NEW STD IN PROCESS FF - REAFFRMATION IN PRI RV - REVISION IN PROCESS WD - WITHDRAWAL IN PRO ES - ENVIRONMENTAL SOUI SP - SUBMITTED PINS FORM	NS - NEW STD IN PROCESS  PF - REAFFRMATION IN PROC.  RV - REVISION IN PROCESS  WD - WITHDRAWAL IN PROCESS  ES - ENVIRONMENTAL SOUND  SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	0-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL	,	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMETTE X-NOT INTENDED FOR ANSE

### ATTACHMENT B-9 S2/257

# STATUS REPORT

STATUS: MECHANICAL VIBRATION AND SHOCK

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DESIGNATION/ EDITION	N/ SUBJECT OR TITLE	R TITLE		STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.43-1984		Criteria for Evaluating Flexible Rotor Balance	ınce	9			
S2.44-199X	1	Measurement and Evaluation of Mechanical Vibration of Machines with Services Speeds from 600-12,000 as Measured on Shafts (ISO/TC 108/SC2/WG1 N 22)	ical Vibration 600-12,000 r.p.m. 2/WG1 N 22) (S2/WG76)	SP 76)	7	တ	
S2.45-1983 (R 1990)	Electrodynamic Tex Methods of Descrit Equipment (counter	Electrodynamic Test Equipment for Generating Vibration, Methods of Describing the Characteristics of the Equipment (counterpart to ISO 5344-1980) (S2/WG72)	erating Vibration, ss of the 80) (S2/WG72)	g		တ	
S2.46-1989 (R 1991)	Cheracteristics to the (counterpart to 150)	Characteristics to be specified for Seismic Tra (counterpart to <u>ISO 8042-1989)</u> (S2/WG81)	ic Transducers 181)	UD;RF		တ	
S2.47-1990		Vibration of Buildings - Guidelines for the Measurement of Vibration and Evaluation of Their Effects on Buildings (S2/WG78)	B Measurement of on Buildings (S2/WG	UD 78)	P.	Ø	
STATI NS - NEW STD IN PROCESS RF - REAFFIRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCE ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM	STATUS NS - NEW STD IN PROCESS RF - REAFFIRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PWS FORM	NR - NEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	ACTIVITY 0-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL		4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CTION CONSIDERED APPROVAL	METHOD C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS, COMMITTEE X-NOT INTENDED FOR ANSI

### ATTACHMENT B-10 \$2/257

## STATUS REPORT

MECHANICAL VIBRATION AND SHOCK

STATUS:

HELD:

COMMITTEE	82						
DESIGNATION/ EDITION	N/ SUBJECT OR TITLE	R TITLE		STATUS	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.48-1993	Servo-hydraulic test vibration - Method o	Servo-hydraulic test equipment for generating vibration - Method of describing characteristics	ting istics	<b>a</b> n		w	
S2.XX	ISO 4867-1984 Co of Shipboard Vibrat	ISO 4867-1984 Code for the Measurement a of Shipboard Vibration Data (S2/WG77)	nt and Reporting	S G	7	တ	
S2.XX	ISO 4868-1984 Co of Local Vibration C	ISO 4868-1984 Code for the Measurement and Reporting SP of Local Vibration Data of Ship Structures and Equipment (S2/WG77)	nt and Reporting sand Equipment (S2/	SP WG77)	7	တ	
\$2.XX	ISO/DIS 5347 Mett Vibration and Shoc	ISO/DIS 5347 Method for the Calibration of Vibration and Shock Pick-ups (S2/WG81)	of	g,	7	Ø	
\$2.57	ISO 3719 Balancing Machines - Syml Panels - Trilingual Edition (S2/WG65)	ISO 3719 Balancing Machines - Symbols for Panels - Trilingual Edition (S2/WG65)	for front	g.		v	
STA NS - NEW STD IN PROCESS FF - REAFFRMATION IN PRI RV - REVISION IN PROCESS WD - WITHDRAWAL IN PRO ES - BIVINONMENTAL SOU	STATUS NS - NEW STD IN PROCESS RF - REAFFRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND	NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	ACTIVITY O-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL		4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	ACTION CONSIDERED APPROVAL	CACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTE X-NOT INTENDED FOR ANSI

WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM

### ATTACHMENT B-11 S2/257

# STATUS REPORT

FIELD:	STATUS:	MECHANICAL VIBRATION	VATION AND SHOCK				
COMMITTEE	: S2						
DESIGNATION/ EDITION	IN/ SUBJECT OR TITLE	OR TITLE		STATUS	ACTIVITY	МЕТНОВ	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.58-1982 (R 1990)	I <u>SO 6070-1981</u> Auxiliary 1 Generators-Methods of De Characteristics (S2/WG72)	ISO 6070-1981 Auxiliary Tables for Vibration Generators-Methods of Describing Equipment Characteristics (S2/WG72)	ration ment	QN .		S	
\$2.55	ISO 5348 Mechanical Mountin (Seismic Pick-ups) (S2/WG81)	ISO 5348 Mechanical Mounting of Accelerometers (Seismic Pick-ups) (S2/WG81)	lerometers		2	S	
S2.60-1987	Counterpart to <u>ISC</u> and Other Safety I	Counterpart to <u>ISO 7475</u> -Balancing Machines-Enclosures and Other Safety Measures (S2/WG65)	hines-Enclosures	9		ဟ	
S2.61-1989	Guide to the Mech (S2/WG81)	Guide to the Mechanical Mounting of Accelerometers (S2/WG81)	celerometers	9		o	
S9.1-1975	ANSI Standard Gu Used in Monitoring	ANSI Standard Guide for the Selection of Mechanical Devices Used in Monitoring Acceleration Induced by Shock (ASME Sta	ANSI Standard Guide for the Selection of Mechanical Devices RV Used in Monitoring Acceleration Induced by Shock (ASME Standard)	RV dard)	-	Ø	
	STATUS		ACTIVITY				METHOD
NS - NEW STD IN PROCESS RF - REAFFRMATION IN PROC. RV - REVISION IN PROCESS WD - WITHDRAWAL IN PROCE ES - BUVIROMMENTAL SOUND SP - SUBMITTED PINS FORM	NS - NEW STD IN PROCESS  RF - REAFFIRMATION IN PROC.  RV - REVISION IN PROCESS  WD - WITHDRAWAL IN PROCESS  ES - ENVIRONMENTAL SOUND  SP - SUBMITTED PINS FORM	NR - NEEDS REVIEW AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE	O-NONE 1-FORMATIVE STAGE 2-DRAFTING STANDARD 3-VOTING ON PROPOSAL	4-AN 5-OB 6-AN	4-ANSI STANDARDS ACTION 5-OBJECTIONS BEING CONSIDERED 6-ANSI CONSIDERING APPROVAL	CTION CONSIDERED APPROVAL	C-ACCREDITED CANVASS O-ACCREDITED ORGANIZATION S-ACCREDITED STDS. COMMITTEE X-NOT INTENDED FOR ANSI

## **ATTACHMENT B-12** \$2/257

## STATUS REPORT

MECHANICAL VIBRATION AND SHOCK

STATUS:

FIELD:

COMMITTEE	25				
DESIGNATION/ EDITION	SUBJECT OR TITLE	STATUS A	ACTIVITY	METHOD	COMMENTS OR EXPECTED DATE OF SUBMISSION TO ANSI
S2.XX	Specifying the Performance of Shock Tests on Digitally Controlled Vibration Machines Using Shock Spectra and Related Criteria		NA	0	S
S2.XX	Digital Methods for Analysis and Presentation of Vibration and Shock Data (S2/WG66)		NA	2	S
S2.XX	Specification for Digital Analyzers in Conjunction with Shock and Vibration Measurement (S2/WG66)		NA	2	S
S2.XX	Graphical Presentation of Damping Material Complex Modulus (S2/WG73)		NA;ES SP	7	Ø
	STATUS				METHOD

C-ACCREDITED CANVASS
O-ACCREDITED ORGANIZATION
S-ACCREDITED STDS. COMMITTEE

6-ANSI CONSIDERING APPROVAL

2-DRAFTING STANDARD 3-VOTING ON PROPOSAL

1-FORMATIVE STAGE

NR - NEEDS REVIEW
AP - ANSI APPROVED
OP - OUT OF PRINT
NA - NOT YET AVAIL.
UD - UP-TO-DATE

WD - WITHDRAWAL IN PROCESS ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM

NS - NEW STD IN PROCESS

PF - REAFFIRMATION IN PROC.
RV - REVISION IN PROCESS

**O-NONE** 

4-ANSI STANDARDS ACTION

X-NOT INTENDED FOR ANSI

# ATTACHMENT B-13 \$2/257

# STATUS REPORT

MECHANICAL VIBRATION AND SHOCK STATUS: FIELD:

COMMITTEE

25

**EXPECTED DATE** OF SUBMISSION COMMENTS OR TO ANSI METHOD **ACTIVITY** STATUS SUBJECT OR TITLE **DESIGNATION/** EDITION

S2.XX

Measurement and Evaluation of Machine Tool Vibration (S2/WG88)

NS;SP

S2.XX

Characterization of the Dynamic Mechanical Properties of Viscoelastic Polymers (S2/WG79)

NS;SP

STATUS

ACTIVITY 0-NONE

5-OBJECTIONS BRING CONSIDERED 6-ANSI CONSIDERING APPROVAL **4-ANSI STANDARDS ACTION** 

METHOD

S-ACCREDITED STDS. COMMITTEE O-ACCREDITED ORGANIZATION X-NOT INTENDED FOR ANSI C-ACCREDITED CANVASS

WD - WITHDRAWAL IN PROCESS NS - NEW STD IN PROCESS RF - REAFFIRMATION IN PROC. ES - ENVIRONMENTAL SOUND SP - SUBMITTED PINS FORM RV - REVISION IN PROCESS

AP - ANSI APPROVED OP - OUT OF PRINT NA - NOT YET AVAIL. UD - UP-TO-DATE

NR - NEEDS REVIEW

3-VOTING ON PROPOSAL

2-DRAFTING STANDARD 1-FORMATIVE STAGE



# INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Technical Committee No. 108 • Mechanical Vibration and Shock

Secretariat: American National Standards Institute Reply to the following address with copy to ANSI: Telephone (212) 248-0373 Telefax (212) 248-0146

Standards Secretariat
Acoustical Society of America
120 Wall Street, 32nd Floor
New York, New York 10005-3993, U.S.A.

S2/257 ATTACHMENT C-1

#### **S2 STANDARDS ON MECHANICAL VIBRATION AND SHOCK**

ANSI S2.2-1959	Methods for the Calibration of Shock and Vibration Pickups
ANSI S2.4-1976 (R 1990)	Specifications for a High-Impact Shock Machine for Electronic Devices
ANS: S2.5-1962 (R 1990)	Recommendations for Specifying the Performance of Vibration Machines
ANSI S2.7-1982 (R 1986)	Balancing Terminology
ANSI S2.8-1972 (R 1990)	Guide for Describing the Characteristics of Resilient Mountings
ANSI S2.9-1976 (R 1990)	Nomenclature for Specifying Damping Properties of Materials
ANSI S2.10-1971 (R 1990)	Methods for Analysis and Presentation of Shock and Vibration Data
ANSI S2.11-1969 (R 1986)	Selection of Calibrations and Tests for Electrical Transducers used for Measuring Shock and Vibration
ANSI S2.14-1973 (R 1986)	Methods for Specifying the Performance of Shock Machines
ANSI S2.15-1972 (R 1986)	Specification for the Design, Construction, and Operation of Class HI (High-Impact) Shock-Testing Machine for Lightweight Equipment
ANSI S2.17-1980 (R 1986)	Techniques of Machinery Vibration Measurement
ANSI S2.19-1989	Mechanical Vibration—Balance Quality Requirements of Rigid Rotors, <u>Part 1</u> : Determination of Permissible Residual Unbalance
ANSI S2.20-1983 (R 1989)	Estimating Airblast Characteristics for Single Point Explosions in Air, with a Guide to Evaluation of

#### **S2 STANDARDS ON MECHANICAL VIBRATION AND SHOCK**

ANSI S2.31-1979 (R 1986)	Method for the Experimental Determination of Mechanical Mobility. <u>Part 1</u> : Basic Definitions and Transducers
ANSI S2.32-1982 (R 1990)	Methods for the Experimental Determination of Mechanical Mobility. <u>Part 2</u> : Measurements Using Single-Point Translation Excitation
ANSI S2.34-1984 (R 1990)	Guide to the Experimental Determination of Rotation Mobility Properties and the Complete Mobility Matrix
ANSI S2.38-1982 (R 1990)	Field Balancing Equipment-Description and Evaluation
ANSI S2.40-1984 (R 1990)	Mechanical Vibration of Rotating and Reciprocating MachineryRequirements for Instruments for Measuring Vibration Severity
ANSI S2.41-1985 (R 1990)	Mechanical Vibration of Large Rotating Machines with speed Range from 10 to 200 rev/s—Measurement and Evaluation of Vibration Severity in situ
ANSI S2.42-1982 (R 1990)	Procedures for Balancing Flexible Rotors
ANSI S2.43-1984 (R 1990)	Criteria for Evaluating Flexible Rotor Balance
ANSI S2.45-1983 (R 1990)	Electrodynamic Test Equipment for Generating Vibration—Methods of Describing Equipment Characteristics
ANSI S2.46-1989 (R 1991)	Characteristics to be Specified for Seismic Transducers
ANSI S2.47-1990	Vibrations of Buildings—Guidelines for the Measurements of Vibrations and Evaluation of their Effects on Buildings
ANSI S2.48-1993	Servo-hydraulic test equipment for generating vibration, Method of describing characteristics.
ANSI S2.58-1983 (R 1990)	Auxiliary Tables for Vibration Generators—Methods of Describing Equipment Characteristics
ANSI S2.60-1987	Balancing Machines—Enclosures and Other Safety Measures
ANSI S2.61-1989 (R 1991)	Guide to the Mechanical Mounting of Accelerometers

#### S2/257 ATTACHMENT D-1

#### Report of Working Group S2/WG76

<u>S2/WG76 - Measurement and Evaluation of Machinery Vibration - P.H.</u>
<u>Maedel. Chair (Counterpart to ISO/TC 108/SC2/WG1)</u>

S2/WG-76 continues to meet six times per year to maintain its high level of activity in writing new national and international standards. As mentioned previously, S2/WG-76 seeks consensus in the international community before attempting to write the corresponding national standards. ISO/TC108/SC2/WG1 (the international counterpart of S2/WG-76) has twelve new standards in production and should publish five before the end of 1993. Then the corresponding ASA national standards will be published shortly thereafter.

S2/WG-76 working in conjunction with Dr. Avril Brenig, plans to host an international meeting of ISO/TC108/SC2/WG1 in Richmond, Virginia during November 10-12, 1993. The meeting will include a tour of Asea Brown Boveri Power Generation Inc. manufacturing facity which has one of the largest high speed turbine/generator balancing units in the world. Eric Lambert, a member of S2/WG-76 is also part of the management team at Asea Brown Boveri.

The chairman of S2/WG-76 continues to coordinate his committees work with the ASME Committee on Operation and Maintenance of Nuclear Power Plants in the area of machinery vibration and machinery vibration condition monitoring. The ASME committee which is composed of machinery vibration experts from all over the United States, has agreed to review and comment on all new S2/WG-76 documents.

S2/WG-76 is presently preparing the initial draft of ISO/TC108 N 606, "Procedures for vibration condition monitoring of machines". This draft should be completed for the international meeting in Richmond, Virginia in November. All of the machinery condition monitoring standards are coordinated by Dr. Douglas Muster, chairman of ISO/TC108/SC5.

Paul H. Maedel, Jr. Chair S2/WG-76 August 1993 August 31, 1993

Members of ASA Working Group S2-76

Dear Colleague:

There will be a meeting of ASA Working Group S2-76 on Friday, September 17, 1993 at the IRD Offices, 500 West Cutton Mills Road, Aston, Pa.

Agenda for the meeting is as follows:

- 1. Review the draft on ISC/TC-108 N 606, "Procedures for vibration condition monitoring of machines" as prepared by members of S2-76 since the last working group meeting held on July 16, 1993. This document must be completed and forwarded to Mike McGuire ASAP, for distribution to the ISO members attending the ISO/TC108/SC2/WG1 meeting in November 8, 1993.
- 2. Review the agenda and USA plans for the November 8th meeting.
- 3. Review the following documents received for discussion at the November 8th meeting:
  - a. Fifth Working Draft for ISO 10816-3, "Mechanical Vibration Evaluation of Machine Vibration by Measurements on Non-Rotating Parts, Part 3: Guidelines for coupled industrial machines with nominal power above 30 kw and nominal speeds between 120 and 15000 rev/min when measured in situ". (prepared by Germany)
  - b. N304, Background to a Japanese proposal for a new work item dealing with vibration of rotating machinery equipped with active magnetic bearings.
  - c. N305, Swedish report summarizing the results of a survey on the vibration of water turbines.
  - d. N-306, Summary , prepared by UK, of typical 'alarm' and 'trip' settings for different types of gas turbines

#### 4. New Business

Sincerely
Tall H. Maedel, Jr.
(215) 353-1640

copy to Dr. Avril Brenig Sabih I Hayek

Kam Khuzaie; Secretary, ASME Subcommittee

#### S2/257 ATTACHMENT D-3

Minutes of ASA Working Group S2-76 Meeting held on Friday, July 16, 1993 at the EPRI Monitoring and Diagnostic Center .

The following members attended the meeting:

Samuel Feldman, Allan Kukk, Richard Colsher, Raymond Misialek James O'Brien, John Niemkiewicz, Chet Strohl, John Weil, and Paul H. Maedel Jr.

The following items were discussed:

#### ITEM

- 1. Reviewed S-2 voting on ISO/DIS 10816-1 Mech. Vibration Evaluation of Machine Vibration by measurement on non-rotating parts, Part 1; General Guidelines
- 2. Reviewed the draft of ISO/TC108/SC3/WG7, Use and Calib. of Vibration Meas. Instruments for Shaft Vibration as prepared by S2-81
- 3. Spent the remainder of the meeting preparing the official draft on ISO/TC108 N 606, Procedures for Vibration Condition Monitoring of Machines, based on preliminary drafts initiated by Messers Colsher and Feldman.
- 4. It was agreed that the next meeting would be held on Friday, September 17, 1993 at the Bently Nevada Offices in Media, Pa.

ACTION

Paul Maedel will prepare an affirmative vote, with editorial comments for the USA Body.

Paul Maedel will prepare constructive comments on the Doc.

Messers Colsher, Weil Misialek, O'Brien, Strobel, Maedel, & Niemkiewicz agreed to meet on August 13 to complete the official draft of the document.

Subsequent discusion with John Winterton disclosed that he would be on vacation at that time and hence could not attend meeting. Hence it was agreed to hold the next meeting at the IRD Offices.

Paul H. Maedel, Jr.



### United States Department of the Interior



BUREAU OF MINES Twin Cities Research Center 5629 Minnehaha Avenue South Minneapolis, MN 55417-3099

September 10, 1993

Avril Brenig Standards Secretariat Acoustical Society of America 120 Wall Street 32nd Floor New York, NY 10005-3993

Dear Avril:

I had previously requested a meeting room for Working Group S2-78 in Denver and have just requested that Mr. Fitting cancel that request (copy attached). The active membership of this Working Group is now so small that a formal meeting is unnecessary. I suggest that this Working Group be tabled until the following can be done:

- 1. Membership be expanded both in numbers and type. We have many acousticians on our list but no structural engineers. As to numbers, the last half-dozen meetings have averaged less than 2.5 persons, far below a critical mass. Most of the persons on the list of 10 are not actually active.
- 2. Participation in ISO. The Working Group needs regular participation in the counterpart ISO Working Group (SC/WG3). I cannot usually attend and believe the ANSI Working Group needs someone who can.
- 3. The efforts of this Working Group were at one time believed important to many people back in the early eighties. It appears their concerns are past them and the group has either done its job or circumstances have changed. Mr. Ying in a recent letter, suggested the Working Group continue in a passive role, following up on I.S. O. drafts. If that is the best course, meetings every two years would be often enough.

Sincerely.

DAVID E. SISKIND

cc: Working Group "members"

S. I. Hayek J. R. Arrington



## INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Technical Committee No. 108 • Mechanical Vibration and Shock

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New York, New York 10005-3993, U.S.A.

ATTACHMENT F-1 S2./ 257

ISO/TC 108 MECHANICAL VIBRATION AND SHOCK (and SUBCOMMITTEES SC1, SC2, SC3, and SC4) (U.S. Technical Advisor, D. Muster for TC 108)

Documents processed by the ASA Standards Secretariat from May through September 1993:

The following documents were received for <u>VOTE AND COMMENT</u> by the U.S. Member Body:

Technical Coordinator	TAG	DRAFT INTERNATIONAL STANDARD(S) (DIS)
P.H. Maedel	<b>\$2</b>	ISO/DIS 10816-1:  Mechanical Vibration -  Evaluation of machine vibration by
,		measurements on non- rotating parts. <u>Part 1</u> : General Guidelines

was announced to S2 (S2/252) on 3 June 1993. The U.S. position, <u>AFFIRMATIVE WITH EDITORIAL COMMENTS</u>, was submitted to ANSI on <u>23 August 1993</u>.

D.G. Stadelbauer

S2

ISO/DIS 1940-2 Mechanical vibration Balance quality
requirements of rigid
rotors - Part 2: Balance

was announced to S2 (S2/255) on 12 July 1993. The U.S. position, <u>AFFIRMATIVE WITHOUT</u> <u>COMMENTS</u>, was sent to ANSI on 23 September 1993.

Technical Coordinator	TAG	DRAFT INTERNATIONAL STANDARD(S) (DIS)
P.H. Maedel	S2	ISO/DIS 8528-8 - Reciprocating internal combustion engine driven alternating current generating sets - Part 8: Requirements and tests for low-power generating sets ISO/DIS 8528-9 - and Reciprocating internal combustion engine driven alternating current generating sets - Part 9: Measurement and evaluation of mechanical vibrations

were announced to S2 (S2/256) on 12 July 1993.

#### **OTHER ACTIONS**

At the <u>ISO/TC 108</u> meeting held in London, U.K. (22 March to 2 April 1993), it was decided to confirm the following ISO Standards:

•	ISO 8042: 1988	Shock and Vibration Measurements - characteristics to be specified for seismic pick-ups
•	ISO 6070: 1981	Auxiliary tables for vibration generators. Methods of describing equipment characteristics.
•	<u>ISO 2954: 1975</u>	Mechanical vibration of rotating and reciprocating machinery. Requirements for instruments for measuring vibration.
•	<u>ISO 2372: 1974</u>	Mechanical vibration of machines with operating speeds from 10 to 200 rev/s. Basis for specifying evaluation standards - Amendment 1-1983.



## INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Technical Committee No. 108 • Mechanical Vibration and Shock

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Acoustical Society of America
335 East 45th Street
New York, New York 10017-3483, U.S.A.

ISO/TC 108/SC 5 N 2 (Secretariat, 30 September 1993)

#### Draft Agenda

ISO/TC 108/SC 5
"Condition monitoring and diagnostics of machines"
Meeting, Swansea, Wales, U.K., 24-25 March 1993

- 1. Opening of meeting.
- 2. Introduction of those present.
- 3. Approval of Draft Agenda (ISO/TC 108/SC 5 N 2).
- 4. Appointment of Editing Committee.
- 5. Review of the establishment of ISO/TC 108/SC 5, including its Title, Scope and Program of Work. [References: ISO/TC 108 N 638, ISO/TC 108 N 639, ISO/TC 108 N 650.]
- 6. Review of ISO/TC 108/SC 5 membership (ISO/TC 108 N 653).
- 7. Review and approval of the initial Working Group structure for ISO/TC 108/SC 5, including appointment of Individual Experts and Project Leaders.

  [Reference: "Initial Working Group structure", ISO/TC 108/SC 5 N 1.]

Adjourn Meeting to permit Working Group meetings.

- 8. Discussion of activities in SC 5 working group meetings.
- 9. Approval of Attendance List, Minutes and Resolutions.
- 10. Future meetings.
- 11. Any other business.
- 12. Adjournment of meeting.



## INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Technical Committee No. 108 • Mechanical Vibration and Shock

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ISO/TC 108/SC 5 N 1 (Chairman, 30 September 1993)

Initial Working Group Structure for ISO/TC 108/SC 5

#### INTRODUCTION

The Title and Scope of ISO/TC 108/SC 5 were approved by the Members of ISO/TC 108 and ratified by the ISO Technical Management Board. In their final form they are stated as follows:

#### Title:

"Condition Monitoring and Diagnostics of Machines"

#### Scope:

Standardization of the procedures, processes and equipment requirements uniquely related to the technical activity of condition monitoring and diagnostics of machines in which selected physical parameters associated with an operating machine are periodically or continuously sensed, measured and recorded for the interim purpose of reducing, analyzing, comparing and displaying the data and information so obtained and for the ultimate purpose of using this interim result to support decisions related to the operation and maintenance of the machine.

At the London meeting of ISO/TC 108 (22 March/2 April 1993), the Program of Work of SC 5 was discussed in terms of the ten work items which had been approved (March 1993) for inclusion in the Program of Work of ISO/TC 108. The titles and scopes of the new work items are given below:

• ISO/TC 108 N 605, "Terminology for the field of condition monitoring and diagnostics of machines."

<u>Scope</u>: To develop a standard terminology for the field of condition monitoring and diagnostics of machines.

• ISO/TC 108 N 606, "Procedures for vibration condition monitoring of machines."

#### **ATTACHMENT G-3**

ISO/TC 108/SC 5 N 1 (Chairman, 30 September 1993)

<u>Scope</u>: To develop, for the purpose of monitoring the vibratory behavior of a machine, recommended methods and procedures for measuring its vibration at selected locations.

• ISO/TC 108 N 607, "Data processing and analysis procedures for vibration condition monitoring of machines."

Scope: To provide recommended methods and procedures for processing signals and analyzing data obtained from vibration sensors attached to a machine at selected locations for the purpose of monitoring the dynamic behavior of the machine.

• ISO/TC 108 N 608, "Data communication formats and methods for exchanging information related to the vibration condition monitoring of machines."

Scope: To develop recommended data formats, methods and procedures for communicating and exchanging analog and digital signals and processed data obtained from vibration sensors attached to machines at selected locations for the purpose of monitoring their dynamic behavior. The vibration data may be obtained from on-line vibration monitoring systems that operate continuously or intermittently or from survey-type monitoring systems that operate only intermittently.

• ISO/TC 108 N 609, "Formats for presenting and displaying data used in vibration condition monitoring of machines."

Scope: To develop recommended formats for presenting and displaying processed data obtained from vibration sensors attached to machines at selected locations for the purpose of monitoring the dynamic behavior of the machines. This activity includes selecting preferred engineering units, scaling, proportion, resolution and labeling.

• ISO/TC 108 N 610, "Vibration condition monitoring instrumentation.

Part 1: Instrumentation for continuous monitoring.

Part 2: Instrumentation for intermittent monitoring."

Scope: To develop the minimum requirements and recommendations for instrumentation used to obtain information related to the vibratory behavior of a machine which (information) can be used as an indicator of the condition of the machine.

#### **ATTACHMENT G-4**

ISO/TC 108/SC 5 N 1 (Chairman, 30 September 1993)

• ISO/TC 108 N 611, "Vibration condition monitoring transducers.

Part 1: Permanently mounted transducers; Part 2: Temporarily applied transducers."

<u>Scope</u>: To develop recommendations for installing the transducers, cables and preamplifiers associated with making vibration condition monitoring measurements.

• ISO/TC 108 N 612, "Data interpretation and diagnostics techniques using information and data related to the vibratory condition of a machine."

Scope: To develop recommended data interpretation and diagnostic techniques which use information and data related to the vibratory condition of a machine to detect faults in the machine, to predict the behavior and performance of the machine under specified operating conditions, and to support and, sometimes, make automatically decisions related to the operation and maintenance of the machine.

• ISO/TC 108 N 613, "Condition monitoring of machines, excluding vibration condition monitoring".

Scope: To review the state of the art of monitoring the condition of machines, excluding vibration condition monitoring, in order to develop an integrated set of tasks related to sensing, measuring and analyzing the condition of a machine in terms of its nonvibratory characteristics, such as, its temperatures at selected locations, the flow of its essential fluids, acoustic output, electrical parameters, contaminants in its lubricants and elsewhere and, where desirable and feasible, to establish relationships (transfer functions) between and among the various descriptors that can be used to characterize the condition of a machine, including descriptors used to characterize its vibratory condition.

• ISO/TC 108 N 614, "Data interpretation and diagnostic techniques concerning the future condition and behavior of machines which use information and data related to the nonvibratory condition of a machine".

Scope: To develop recommended data interpretation and diagnostic techniques which use information and data related to the condition of a machine, excluding that related to its vibratory condition, to detect faults in the machine, to predict the behavior and performance of the machine under specified operating conditions, and to support

ATTACHMENT G-5
ISO/TC 108/SC 5 N 1
(Chairman, 30 September 1993)

and, sometimes, make automatically decisions related to the operation and maintenance of the machine.

. . . . . [ISO/TC 108 N 615]

At the Second Plenary Session of TC 108's meeting in London, a significant portion of the session was taken up with discussing the allocation of the just-cited Work Items. It was agreed to allocate the work items as follows:

#### To ISO/TC 108/SC2:

• ISO/TC 108 N 606, "Procedures for vibration condition monitoring of machines."

#### To ISO/TC 108/SC 3:

• ISO/TC 108 N 610, "Vibration condition monitoring instrumentation.

Part 1: Instrumentation for continuous monitoring.

Part 2: Instrumentation for intermittent monitoring."

• ISO/TC 108 N 611, "Vibration condition monitoring transducers.

Part 1: Permanently mounted transducers; Part 2: Temporarily applied transducers."

#### To ISO/TC 108/SC 5:

- ISO/TC 108 N 605, "Terminology for the field of condition monitoring and diagnostics of machines."
- ISO/TC 108 N 612, "Data interpretation and diagnostics techniques using information and data related to the vibratory condition of a machine."
- ISO/TC 108 N 613, "Condition monitoring of machines, excluding vibration condition monitoring".
- ISO/TC 108 N 614, "Data interpretation and diagnostic techniques concerning the future condition and behavior of machines which use information and data related to the nonvibratory condition of a machine".

At this time, the three work items cited below are not assigned:

- ISO/TC 108 N 607, "Data processing and analysis procedures for vibration condition monitoring of machines."
- ISO/TC 108 N 608, "Data communication formats and methods for exchanging information related to the vibration condition monitoring of machines."

ISO/TC 108/SC 5 N 1 (Chairman, 30 September 1993)

• ISO/TC 108 N 609, "Formats for presenting and displaying data used in vibration condition monitoring of machines."

THE WORKING GROUP STRUCTURE OF ISO/TC 108/SC 5

The philosophy underpinning the design of the initial working group structure of ISO/TC 108/SC 5 is based in two mutually supportive ideas: (1) the desire to develop an integrated group of standards in condition monitoring and diagnostics of machines and (2) the need to monitor the activities of working groups in subcommittees other than SC 5 in order to ensure that the thrust of their work can be used by ISO/TC 108/SC 5 to further its objectives as they are defined and delimited by its Scope.

On the basis of these ideas and the substance of the Scopes of ISO/TC 108/SC 5 and the other subcommittees in ISO/TC 108 and taking into account the allocations of work items made at the London meeting, an initial working group structure for ISO/TC 108/SC 5 has been devised. It is intended to be used as the basis for organizing the activities of the subcommittee at its initial meeting in Swansea, Wales, U.K., on 24-25 March 1994. It is likely that, after discussion at the Swansea meeting, changes in the initial structure will be recommended.

Three kinds of working groups are included in the initial structure of ISO/TC 108/SC 5

Regular working groups: Working Groups 1, 7, 8 and 9 are in this category.

Counterpart working groups: Working Groups 2 and 6 are the counterparts of working groups in other subcommittees that are working on tasks related to condition monitoring and diagnostics of machines. They are denoted by an asterisk (\*) in the list below. The Convenors of these counterpart working groups will be individual experts who are also members of the other-than-SC 5 working groups to which a specific work item in the field of condition monitoring and diagnostics of machines has been assigned. The SC 5 counterpart groups are charged with reviewing the status of the work in condition monitoring and diagnostics of machines being conducted in other-than-SC 5 working groups in order to keep track of the work being done there, to evaluate its applicability to the overall work and responsibilities of SC 5, and, if appropriate, to inform the other-than-SC 5 working group of the results of its evaluation.

Exploratory Working Groups: At this time, the new Work Items designated above as N 607, N 608 and N 609, are in an administrative limbo. They are included in the approved Program of Work of the Technical Committee but have not been assigned permanently to one of its Subcommittees. The scopes of the work items are within

#### **ATTACHMENT G-7**

ISO/TC 108/SC 5 N 1 (Chairman, 30 September 1993)

the scope of SC 5; thus, on a temporary basis and until they have been assigned permanently to a subcommittee, Working Groups 3, 4 and 5 will act as exploratory working groups only.

The initial structure of ISO/TC 109/SC 5 consists of the following working groups with the noted assignments

SC 5/WG 1	Working group for Work Item N 605, "Terminology".
SC 5/WG 2*	Counterpart group for Work Item N 606, "Vibration condition monitoring of machines" (SC 2).
SC 5/WG 3**	Exploratory group for Work Item N 607, "Data processing and analysis procedures for vibration condition monitoring of machines".
SC 5/WG 4**	Exploratory group for Work Item N 608, "Data communication formats and methods for exchanging information related to the vibration condition monitoring of machines".

- SC 5/WG 5\*\* Exploratory group for Work Item N 609, "Formats for presenting and displaying data used in vibration condition monitoring of machines".
- SC 5/WG 6\* Counterpart group for Work Item N 610,
  "Vibration condition monitoring
  instrumentation" and Work Item N 611,
  "Vibration condition monitoring
  transducers" (SC 3).
- SC 5/WG 7 Working group for Work Item N 612, "Data interpretation and diagnostics techniques using information and data related to the vibratory condition of a machine".
- SC 5/WG 8 Working group for Work Item N 613, "Condition monitoring of machines, excluding vibration condition monitoring". [Note: At this time, performance monitoring and lubrication fluids monitoring are two candidate topics for consideration by this working group. If appropriate, as specific work items are developed from the general topic assigned to WG 8, SC 5 will establish new working groups with their own convenors.]
- SC 5/WG 9 Working group for Work Item N 614, "Data interpretation and diagnostic techniques

ATTACHMENT G-8
ISO/TC 108/SC 5 N 1
(Chairman, 30 September 1993)

concerning the future condition and behavior of machines which use information and data related to the nonvibratory condition of a machine".

#### CLOSING

The initial working group structure for ISO/TC 108/SC 5 discussed above is intended to assist the Subcommittee in organizing itself. It is anticipated that as the work in developing standards in condition monitoring and diagnostics of machines evolves the structure of the Subcommittee will be changed as well. Thus, the initial structure should not be considered permanent. The transdiscipline of condition monitoring and diagnostics of machines is an emerging field of technical activity and changes in the tasks assigned to the Subcommittee and its working group structure should be anticipated.

#### S2/257

#### ATTACHMENT H-1



## ACOUSTICAL · SOCIETY · OF · AMERICA

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335 EAST 45TH STREET, NEW YORK, NEW YORK 10017-3483

17 September 1993

TO: S.I. Hayek, Chair S2

Re: Letter Ballot LB/S2/254 sent to Accredited

Standards Committee S2 on 16 July 1993 and

closed on 8/27/93

SUBJECT:

Approval Mr. David J. Evans completing the term of office of Mr. S.I. Hayek as Chair of S2; Mr. Sabih I. Hayek becoming an Individual Expert to S2; and the establishment of the S2 Editorial Committee, with the scope as given in ATTACHMENT A, chaired by Mr. Hayek

Enclosed please find tally of the above letter ballot, showing results as follows:

#### **CLASSIFICATION OF MEMBERS**

AFFIRMATIVE VOTES	10	P - PRODUCER	4 -
NEGATIVE VOTES	0	C - CONSUMER	0
ABSTENTIONS	0	G - GOVERNMENT	4.
NOT RETURNED	2	GI - GENERAL INTEREST	4
			_
TOTAL	12	TOTAL	12

#### S2/257

#### **ATTACHMENT H-2**

- 2 -

#### Letter Ballot S2/254

#### Continuation of results of letter ballot S2/254:

#### **AFFIRMATIVE VOTES:**

Ehmann, J. Alternate

Evans, D.J.

Hayek, S.I.

Henderson, D.A.

Lally, R.W.

Olsen, N.

Rawlings, D.

Schontal, E.

Stadelbauer, D.G.

Taddeo, R.

Institute of Environmental Sciences

**National Institute of Standards** 

and Technology

**Acoustical Society of America** 

U.S. Dept. of the Air Force

PCB Piezotronics, Inc.

**Hewiett-Packard Company** 

**National Electrical Manufacturers** 

**Association** 

Bruel & Kjaer Instruments, Inc.

**Schenck Trebel Corporation** 

U.S. Dept. of the Navy-Naval Sea Command

#### **NEGATIVE VOTES:**

None

#### **ABSTENTIONS:**

None

#### **NOT RETURNED:**

Shang, P.

Navai Surface Warfare Center

Sill, R.D. Endevco Corporation

#### S2/257 ATTACHMENT H-3

-3-

LB/S2/254

Continuation of results of letter ballot S2/254:

LATE RESPONSE:

None

Avril Brenig Standards Manager

cc: Vice Chair, Standards Committee Chair and Vice Chair, ASACOS



ACOUSTICAL SOCIETY OF AMERICA

354 BART 45TH STREET, NEW YORK, NEW YORK 10017-948:

S2/257 ATTACHMENT H-4

OFFICE OF THE STANDARDS SECRETARIAT

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**IMMEDIATE RETURN REQUESTED** 

LB/S2/254 16 July 1993

Return to:

Letter Ballot Department

Due date:

27:August 1993

ADMINISTRATIVE LETTER BALLOT
ACCREDITED STANDARDS COMMITTEE S2,
MECHANICAL VIBRATION AND SHOCK

**Topic:** Approval of:

(1) Mr. David J. Evans completing the term of office of Nr. S.I. Hayek as Chair of S2;

(2) Mr. Sabih I. Havek becoming an Individual Expert to \$2;

and the second of the second of

(3) The establishment of the S2 Editorial Committee with the scope as given in ATTACHMENT A. chaired by Mr. Hayek

Approved for circulation by

Sti Hayek, Chair S2

Distributed by:

A. Brenig, ASA Standards Manager

Reference Document(s):

ATTACHMENT A

Listing of scope of newly proposed <u>S2 Editorial Committee</u>

#### **Background Information:**

Mr. Sabih I. Hayek, Chair S2, will be on sabbatical leave from August 1993. Mr. Diivid J. Evans of the National Institute of Standards and Technology (NIST) has agreed to complete Mr. Hayek's term office, which runs through the Spring 1994 meeting of the Acoustical Society.

Mr. Hayek recommends that Mr. Evans take over chairmanship of S2 and, at the same time, become the Acoustical Society representative to Accredited Standards Committee S2, in his place.

It is also recommended that Mr. Hayek become an Individual Expert to S2 and that he chair the proposed S2 Editorial Committee, whose scope is given in <u>ATTACHMENT A</u>.

Mr. J.R. Arrington will continue as Vice Chair of S2, and as ASA representative to S2, as well as Chair of the Advisory Planning Committee to S2.